INTRODUCTION

To preserve Federal Funding for our construction program we have agreed with FHWA to be a self-regulating, self-auditing agency.

It is WSDOT's responsibility to monitor and approve the materials documentation for each project and to follow the Stewardship Agreement we have with FHWA. Our Construction Manual is basically an outline of our responsibilities.

One of the most challenging parts of materials documentation is providing the necessary proof that each product used was approved and accepted properly. This manual will help guide you through some of the processes to accomplish that job.

BASICS OF MATERIALS DOCUMENTATION

Who is involved?

The people most involved in materials documentation process are the:

Materials Documentation Engineer/Technician

As the materials documentation person it is your responsibility to receive, process, track, and maintain material submittals for all Contracts administered by your office.

You are also a vital link in the communication chain of the project office. One of your many tasks is to keep inspectors informed of material approvals and any acceptance criteria, such as sampling, testing, manufacturer's certification, or catalog cuts, that are required.

In some offices you will also be in charge of coordinating the materials testers. Coordinating usually involves making sure the testers are qualified and on the jobsite when needed.

Project Inspector

Project inspectors are the people involved day to day in every aspect of the construction project. They are responsible for collecting the major portion of samples and providing documentation for materials installed on the project. -They

are also responsible for accepting or rejecting each material, prior to incorporating it into the project. Without the help of the project inspector a meaningful documentation package cannot be assembled.

Nothing will help you do your job more effectively than a good working relationship and good communication with your project inspectors.
Good communication helps you stay informed about what is happening day to day on contracts. Knowing what is happening on the project allows you to track necessary documentation and add it to the files. Good communication also helps you keep the project inspectors up-to-date on materials approved for use and what the process is for acceptance.

Office Engineer

The office engineers are involved in materials documentation because of their knowledge of the "inside" work.

They are responsible for making payments and deferrals, writing change orders, monitoring quantities, and calculating costs for force account work. Materials documentation is part of each one of these responsibilities.

Project Engineer

A Project Engineer (PE) has the legal responsibility for every contract administered by the project office. Their signature is required on all legal documentation, which includes some of the documents you will be administering.

Without their support a good materials documentation program cannot be implemented.

Materials Approval and Acceptance

All materials permanently incorporated into a project (and certain temporary items as documented in the Construction Manual) need to be “Approved” prior to use.

Material Approval

Material approval is actually done by testing or specific evaluation of the product against the state specifications as stated in the Standard Specifications or Contract Plans. This is done prior to the material arriving on the jobsite.

- RAM
- QPL

Material Acceptance

Materials acceptance is accomplished in several different ways. Once a material is approved and can demonstrate the ability to meet specification a proper method of acceptance is determined for that type of product.

Some of the methods used to accept materials are:

- Testing
- Manufacturer's Certificate of Compliance
- Visual Inspection
- Shop Drawings
- Catalog Cuts

Each of these methods will be explained in more detail later in this manual.

Acceptance is almost always done in the field at the "Point of Acceptance" to verify that what was approved is, in fact, what is being placed.

PRECONSTRUCTION ACTIVITIES

Pre Construction activities should include downloading a copy of the Record of Materials (ROM) into the database or the spreadsheet currently used in the office for tracking materials. Copies of the ROM should be made for the contractor and subcontractors. It is a good idea to supply copies of forms, such as Request for Approval of Materials (RAMs), the website for the Qualified Products List (QPL), also supply your WSDOT e-mail address and your phone number.

It is good practice to attend all Pre-construction Conferences (PreCons). Talk with your Project Engineer, Office Engineer and the Inspector in charge of the project about any documentation issues that need to be addressed during the PreCon.

Be sure to read the Contract prior to the meeting, so you are prepared to speak on issues concerning materials submittals or answer any questions that might arise. Look for any unusual submittals or unique Special Provisions, which change standard approval or acceptance criteria.

Record Of Materials (ROM)

The ROM is a list of documentation requirements provided by the State Materials Laboratory in Tumwater. The ROM is generated by the ROM Engineer and is made available via computer on a program called "Record of Materials".

Downloading a ROM

Material documentation begins the day the contract is awarded and ends with the final certification. The first thing to do for each contract is to download the ROM to your PC. To do this you need the Record of Materials program (the most current version) on your computer. If you do not already have this, speak to your PC coordinator to have it installed or call your local help desk for direction. You may be granted user privileges by contacting the Tumwater Lab ROM Engineer at (360) 709-5444. A tutorial for downloading a ROM is attached.

Record Of Materials V3.ppt

The "Maintained" ROM

A "maintained" ROM is a copy of the ROM with all the material documentation information you have received recorded on it. A maintained or working *ROM* is one of the items requested at a documentation review. The *maintained* or *working* ROM is a valuable tool for tracking materials if it is kept current throughout the life of a Contract.

What is the function of a "Maintained" ROM?

The function of a maintained ROM is to document and track material submittals, approvals, quantities, acceptance, and anything else you need to track to complete the documentation package for the contract.

Once you have opened the ROM for a new contract save it to your computer or a disk in the materials tracking program your office uses and begin using it with the first documentation you receive.

Maintaining the ROM has several advantages; it is a quick reference that tells you what information has been received and where it is filed. You can share copies with contractors and inspectors. When it is time to close a contract you can easily tell which items have been supplied and those that have not.

Creating a "Maintained" ROM

The maintained Rom can be as detailed or simple as you choose to make it.

There are as many Materials Tracking Programs in use in the State as there are field offices. You will need to determine what system is being

used in your particular office and rely on local information for support. If your office does not have a tracking program, a simple spreadsheet in Excel works well and is quite easy to use.

The more detailed information you provide the better. Include Request for Approval of Material (RAM) and Qualified Products List (QPL) numbers, manufacturers submitted for each item, make, model, and color(?) for each item and appropriate acceptance codes. Information on certifications received and testing performed should also be recorded. This is a good place to track transmittals for samples sent to the State Materials Laboratory (MatsLab) in Tumwater or those sent to your regional lab.

Numbering Submittals

Prior to recording information in the *maintained* ROM a numbering system should be applied to each submittal. If your office does not already use a system, be sure to set one up and log in each submittal assigning each a unique number. Use these numbers to help track your information in the *maintained* ROM for your contract.

Maintaining and Filing Materials Documentation

As with other types of information the materials documentation must be organized and kept in a manner that makes it easy to locate and file each item. Most offices have a filing system set up. If your office does not currently have a filing system or you would to change the existing filing system, here is a basic system that works well.

- **Designate a file for each bid item that has material documentation**
  Use the Bid Item Number as it appears on field note records or on the Contract proposal for each file.

  Example: Your office has decided to use a hyphenated numbering system for their contract files. Each type of file has a numeric designation, all Statements of Intent go into files beginning with 4 -_ _, all Contractor Payroll information goes into files that begin with 6- _ _ and so on.

- **Material Files, in this mythical office, all begin with 14-_ _.**

  Example: You have information for bid item # 9.01, Gravel Borrow. The file for that item would be 14-09 – Gravel Borrow. Everything that is related to Gravel Borrow goes into that file, RAMs, Pit Approval Reports, Test Reports, Transmittals for samples sent to the lab, everything.

If you need more space go to file 14-09B – Gravel Borrow and so on. This is a simple but direct way to organize the files so anyone coming from outside could find information on a particular bid item.

MATERIAL APPROVAL

Contractors have two options for submitting materials to the Project Office for Approval. The Qualified Products List (QPL) and Request for Approval of Materials (RAM).

Qualified Products List (QPL)

The QPL is available in three formats

- A published book- always use the latest version
- The online version- this system has only minimal information but is available to manufacturers and contractors it is located at http://www.wsdot.wa.gov/biz/mats/QPL/QPl.cfm. This version is continually updated with new information about products.
- A desktop icon for your PC- using the Start menu click on DOT Applications, then Materials Lab this will take you to the QPL icon. This system has many features specifically designed for WSDOT personnel.

Contractor's QPL Submittal

The contractor submits a copy of the QPL page from the book or a printout from the Internet site with the appropriate contract specific information filled out and the product they wish to use clearly marked.

As the Materials Documentation Engineer, your job is to review all these submittals for their suitability for your contract. When you receive a QPL submittal:

1) Assign it a unique number (for tracking)

2) Review the submittal as it applies to YOUR contract. Look at the ROM, The Contract Plans, Special Provisions and the Standard Specifications to reassure yourself the material submitted meets the requirements set out in those documents. The specification listing within the QPL is the only specification for which the material has been pre-approved.

Example: Your contract documents calls for a specific type of material for paint stripe, the contractor submits a QPL for paint stripe but it isn't the type called for in your plans. You would **not** approve the submittal because it does not meet the requirements of YOUR contract. This has nothing to do with the product itself, it simply is not what is called for on that particular job.

Reviewing suitability of material is very important when approving RAM and QPL submittals. If you have questions about the approval of any item submitted on a RAM or QPL, contact the RAM engineer at the State Materials Lab at (360) 709-5445.

Request for Approval of Materials (RAM)

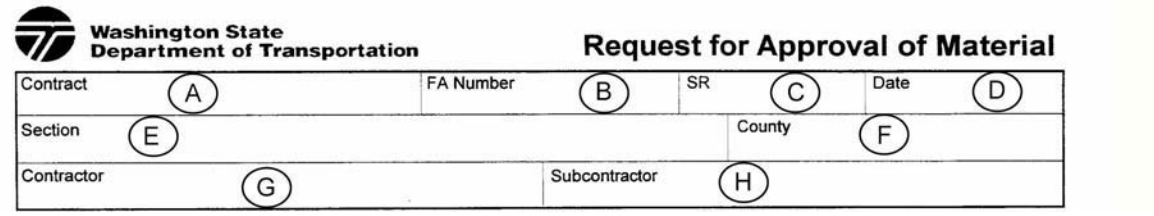
The RAM form is an official WSDOT form (#350-071). The forms are supplied through stores or you may download a copy from the electronic forms catalog in FMPro. There is also a RAM in PDF located on the Materials Lab Home Page at http://www.wsdot.wa.gov/biz/mats/RAM/. Each material used on a construction project must be approved prior to use, RAMs are one way of requesting approval.

Each RAM should have a unique identifying number, (see numbering submittals above) record this number on the RAM immediately.

Processing

Check the RAM for completeness, upper portion completed, Contract information entered.

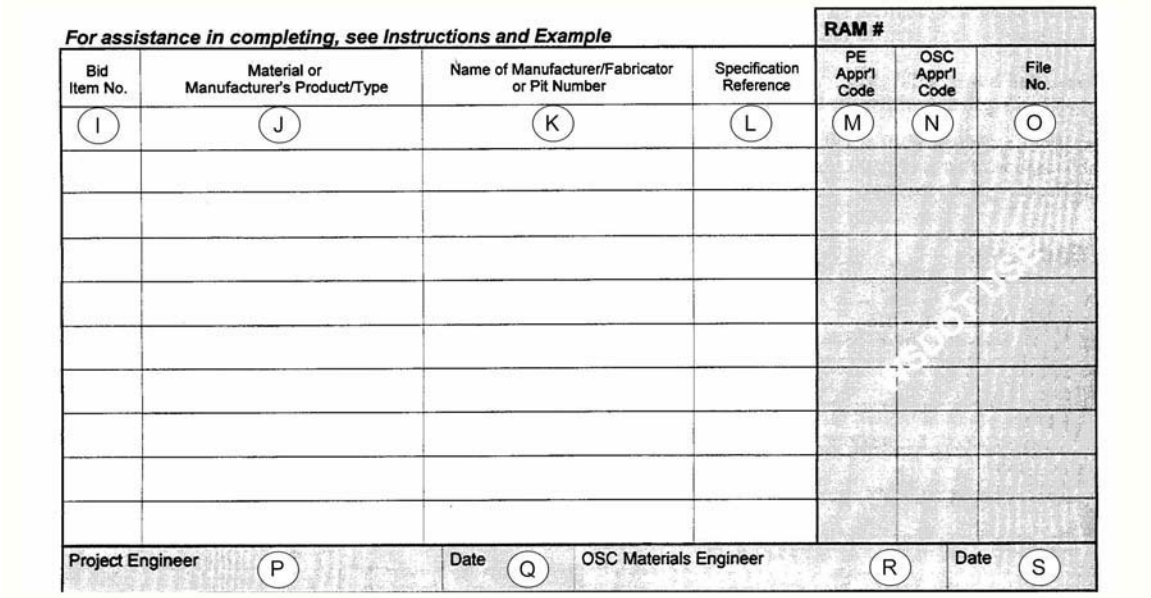
- There should be information in squares A-H (see Figure __)
  - A - Contract Number
  - B – Federal Aid Number
  - C – SR Number
  - D – Date
  - E – Section, this is the TITLE of the project
  - F – County name
  - G – Prime Contractor's name
  - H – Subcontractor's name



Check the bid item number and compare it with the bid item as it appears on your ROM. Check the specification reference, it should match that of your ROM.

- The information in areas marked I – O that are applicable should also be completed
  - I – Bid Item Number, sub item is also helpful if available (required)
  - J – Material or Product, this would be the trade name of the product or the name it is most easily recognized by. (required)
  - K – Name and Location of Fabricator, Manufacturer or Pit Number, this should be the actual manufacturer, not the supplier. (required)

- L – Specification Reference, this information is useful when comparing material to specifications. You may also list plan sheet number or Special Provision page in this area. (required)
- M – PE Appr'l Code, these codes are those the PE office can assign. (required)
- N – Hdqtr. Appr'l Code, this column is for the State Materials Lab in Tumwater only. (required only if item is marked with a 7 in the PE Appr'l Code column)
- O – File No. This is an optional field, if the approval code is from the QPL you may enter the file number from the QPL in this area.
- P – Project Engineer, this space is for the Project Engineer to place their official signature. (required)
- Q – Date the PE signs the RAM (required)
- R – State Materials Engineer signature space. (only used when RAM is submitted to the State Materials Lab in Tumwater for approval.)
- S – Date the State Materials Engineer signs RAM (only used when RAM is submitted to the State Materials Lab in Tumwater for approval.)



For assistance in completing, see Instructions and Example

RAM #

Bid Item No.	Material or Manufacturer's Product/Type	Name of Manufacturer/Fabricator or Pit Number	Specification Reference	PE Appr'l Code	OSC Appr'l Code	File No.
(I)	(J)	(K)	(L)	(M)	(N)	(O)

Project Engineer (P) | Date (Q) | OSC Materials Engineer (R) | Date (S)

Read the ROM for documentation and acceptance criteria. You will find the ROM gives you references to Special Provisions, Plan Sheets, Addenda, and Standard Specifications that apply to your contract bid item.

Examine your contract carefully for information about the bid item for which the RAM was submitted.

Compare your contract requirements with the material submitted.

When you are satisfied the material meets the needs of your contract proceed to the approval portion of the process. If the material submitted clearly does not meet the requirements of your contract, reject it using the codes listed on the bottom portion of the RAM, have the authorized person sign the RAM, then copy and distribute. It is not uncommon to have several rejected RAMs on a job, don't feel like you have to "approve" each of them.

Keep all original RAMs in your office except when it is necessary to send them to the State Materials Lab for approval.

- NEVER make changes to any RAM submitted by the Contractor without first contacting the Contractor and then make sure you completely document all conversations regarding any changes.

The name of the manufacturer, fabricator, or pit number needs to be filled in as well as the specification. The main objective is to have the actual company making the product listed, not the supplier. These sources are what need to be looked up in the QPL, ASA, and Approved Fabricators' databases.

Tools For Approval

To approve RAMs you have four tools at your disposal:

- **Qualified Products List (QPL)**
    - The QPL, is a tool maintained by the State Materials Lab in Tumwater. It is a list of products that have demonstrated they can meet WSDOT specifications. Contractors have the option of using products from the QPL for many types of work performed on DOT projects.
    - If a material submitted on a RAM is identical to one in the QPL, the intended use is within the specification, and the material is qualified for use in the QPL, you may use QPL acceptance codes to approve the RAM. In the PE approval box enter the letters QPL and under those letters write the acceptance code. In the File column, enter the Reference #, obtain appropriate signature, copy and distribute.
- **Aggregate Source Approval (ASA) database**
    - The ASA database is available on your desktop pc or on the WSDOT home page at www.wsdot.wa.gov/biz/mats/asa, its primary function is to list approved aggregate sources. Similar to the QPL database, the online version has minimal information but it too is available to the general public.

- This database is also maintained by the State Materials Lab in Tumwater. It can be accessed through the internet, intranet or a desktop icon.

- The ASA database is for approving aggregate sources. If a contractor submits Crushed Surfacing Base Course from Pit D-19, for example, open the ASA database, enter the pit number (D-19) in the "Agg Source" field of the worksheet and push the "Find" button located to the right at the center of the screen.

- In the field located just under the words "Washington State Department of Transportation" you will see a line of text that starts with the pit designation (D-19) followed by the owner's name, Location, etc. Double click on the text line to open the file for that pit.

- On the next screen you will see several tabs at the top of the page, open the "Report" tab for information on what materials may be obtained from that pit. Print a copy of the report to attach to the RAM and/or to file in the bid item file as backup information for material approval. If the pit submitted for use is acceptable according to the report, code the item on the RAM from the list at the bottom of the RAM.

  Once a Pit has been approved to provide material, acceptance is usually by field acceptance testing. Read the Construction Manual Section 9-5.2 for sampling and testing frequency information.

- **Approved Nurseries List**

  - The Approved Nurseries List is maintained and distributed by the RAM Engineer at the Tumwater Materials Lab. It is a list of nurseries and seed suppliers that are approved to supply materials to our contracts.

  - RAMs with plant materials are coded with an 8 and a note for visual inspection prior to incorporating.

  - RAMs for seed suppliers can also be approved from the Approved Nurseries List by looking at the bottom tab labeled “Seed Suppliers”. RAMs for Seed should be coded with a 2, and a note that a Bag Label shall serve as certification.

- The seed formula must match the seed formula in the Special Provisions for your contract.

- **Approved Fabricators List**

  - The Approved Fabricators List is maintained by the State Materials Lab in Tumwater. It is available by calling the RAM engineer at (360)709-5445. A mail out version will be provided with regular updates.

  - When a material submitted on a RAM is an item made by a fabrication shop, you may use the Approved Fabricator's List for approval. If the shop is on the approved list and it is approved to make the item listed on your RAM, you may code the item on the RAM with the appropriate code (usually a 5), obtain the appropriate signature, copy and distribute. Often the fabricator is also required to provide shop drawings, in that case, a code 4 should also be used. Be sure to send a copy of the RAM and any approved shop drawings to fabrication inspection at MS 47365.

Approval Codes

All RAMs need to be coded with one of the codes listed at the bottom of the RAM form.

Code 1 Any material requiring testing should have a code 1 entered in the P.E. approval column.

Code 2 is for Manufacturer's Certificates of Compliance.

Code 3 Will no longer be used.

Code 4 for items requiring approved shop drawings.

Code 5 (appropriate for fabricated items) "Only 'Approved for Shipment' or 'WSDOT Inspected' material shall be used",

Code 6, "submit Materials Certificate of Origin to Project Engineer" For iron or steel when Federal Funding is involved with the contract.

Code 7 is for items you are unable to code in the field office.

Use appropriate codes for each item on the RAM, for many items more than 1 approval code is appropriate. Indicate all the codes that apply in the PE Apvl. column on the form.

Completing The RAM

Once the RAM is coded obtain the authorized signature and follow filing procedures accepted in your office. Always send a copy of approved RAMs to the State Materials Lab.

If you are unable to approve a RAM with the information available to you in the project office, enter a code 7 in the PE approval box, obtain the appropriate signature and send the RAM to the State Materials Lab in Tumwater, WA.

> *Note: Send the original RAM but ALWAYS keep a copy of it in the office until you have the original back with approval codes and a signature in RED. Never send anything without keeping a copy for your files, occasionally things do get lost in the mail or misfiled. A copy can always be converted for use as an original if necessar*y.

When the RAM is returned to you from the Tumwater Lab, make copies and distribute, you do not need to send a copy to the State Materials Lab in Tumwater, they automatically keep copies of any RAMs they process.

Proprietary Items

Items called out in Plans or Special Provisions, which identify manufacturer, make and model are called *proprietary items*. Usually when a contract lists proprietary items the situation has been carefully evaluated for performance needs and the particular items called for are known to meet those requirements. It is common practice to add the "or approved equal" clause to Special Provisions written this way.

- When the contractor submits a RAM for a proprietary item that lists the exact manufacturer, make and model listed in the Special Provisions or Plans you may code the RAM in your office. If there are no additional requirements you may code the RAM with an 8. Add the words Field Verify to the RAM to remind inspectors to check and document what they use on the job. You should keep written documentation from your inspectors for each material accepted and used on a project in your materials file.

If additional requirements are asked for in the Special Provisions use the code corresponding to that requirement when coding the RAM.

- Examples of this would be the requirement for a manufacturer's certificate of compliance stating the product meets the requirements of "_____" (any number of specifications or requirements may fill the blank). In this case a code 2 is appropriate.

- Other requirements may include independent lab tests or samples. Read the codes at the bottom of the RAM to determine the proper acceptance codes.

There are times contractors want to use a different product than what is called for as a proprietary item. When this is the case, carefully read the Special Provisions and Plan Sheets for materials, checking for the "or approved equal" clause. If the clause is included for the bid item in your contract, other products may be allowed providing the contractor can prove the material meets or exceeds the requirements of your contract.

If you are unsure as to the suitability of a product submitted as an equal, refer the RAM and all related material to the State Material Lab in Tumwater. Allow ample time for approval, Standard Specifications allow 30 days for approval of most products so when talking to a contractor remember to indicate how long the turnaround time can be.

Shop Drawings

Shop drawings are generally manufacturer's or fabricator's drawings that show details about an item being built for a specific job.

- Six copies are submitted to WSDOT for approval. Approval is by the Project Engineer or someone at Headquarters. Any shop drawing requiring Bridge and Structures approval (i.e.: anything that is structural) must be submitted to Bridge and Structures by the field office or may be sent directly to Bridge and Structures by the contractor.

- Check your Record Of Materials (ROM) and approved RAMs for items requiring shop drawings.

Signal and Light Pole Drawings. (Section 8-20.2B of Construction Manual)

Contract Special Provisions list the type and drawing number for poles that are acceptable for each job. This list varies with application so do not assume what is good for one job will be good for others.

- The contractor must submit a RAM designating manufacturer of the poles they intend to use. Usually when the RAM is submitted it will have copies of the shop drawing(s) for the poles attached.

- Match the drawing number for the submitted pole with your contract Special Provision and Plans. If the drawing submitted matches one of the approved drawings listed, you may code the drawing with a code 4 & 5 (and 6 when necessary).

- Send a copy of the approved shop drawing and RAM to Fabrication Inspection in your area and a copy to the State Materials Lab in Tumwater Mail Stop 47365.

- If the submitted drawing does not match your contract requirements, send the drawing (6 sets) and RAM to the Bridge and Structures Office, MS 47340 for review and approval.

- When the drawings have been checked and approved, distribute them according the Construction Manual, Section 8-20.2B.

Bridge and Structures has a Web Site that lists the "Pre Approved" light and signal pole drawings. The address is
www.wsdot.gov/eesc/bridge/lightsignalstandards/.
You can check for signal and light pole drawing approval here. This site will list the latest revision of each drawing that has been approved.

Catalog Cuts

Catalog cuts are another method of approving materials. When a material is submitted on a RAM the required approval may be by catalog cut. If this is the case, the RAM Engineer will code the RAM with an "approval withheld" code and ask for further information. The material will not be approved until an acceptable catalog cut is submitted to the State Materials Lab in Tumwater and it is reviewed and approved by the appropriate subject matter expert. Once a satisfactory catalog cut is approved, it will be returned to the project office with a note that final acceptance of the material will be field verification that what was approved is, in fact, what was used. Do not assume what works for one project will work for another.

- Fill out a copy of the Transmittal of Catalog Cuts supplied to the field office with the Notice of Availability and ROM. Attach it to the Catalog Cut and mail it to the State Materials Lab in Tumwater, MS 47365 (Campus mail) or PO Box 47365, Olympia, WA 98504-7365 (U.S. mail). Include the Bid Item number and Sub Item Number whenever possible.

  - Catalog Cuts without the Transmittal attached or with incomplete information will not be accepted. There is a copy of this form and a sample Catalog Cut on pages 35-37 of the appendix.

- The materials lab no longer requires six copies of Catalog Cuts, please, send only two copies. As with other documentation, make copies for your files before mailing.

When a Catalog Cut is returned to you, check it for approval or rejection and any notes that may have been made. Make appropriate copies and distribute.

Asphalt and Concrete Plant Approval

Asphalt and Concrete plants have a different approval process, if you are unsure the plant submitted is an approved plant, check with your region materials lab. Asphalt plants have a recommended annual inspection that may be performed by the Region Lab or a plant inspector. Although no longer a requirement, it is recommended that a copy of the annual report for the plant submitted should be included in your documentation file. Concrete plants are inspected by the Region Materials Labs. Check with yours for a list of approved plants.

State Materials Lab:	Tumwater	(360) 709-5400
Region Materials Labs:	Northwest	(206) 768-5901
	Olympic	(360) 357-2653
	Southwest	(360) 905-2230
	Eastern	(509) 324-6170
	North Central	(509) 667-3035
	South Central	(509) 577-1791

MATERIALS ACCEPTANCE

Sampling and Testing

Material submitted on a RAM that is approved with a code 1 or any material submitted on a QPL with an acceptance code beginning with 10 requires testing by a **qualified tester.**

Qualified Testers

Qualified testers **shall** perform **all** materials acceptance tests. A qualified tester is a person who has passed a written test and a performance test based on the Test

Methods they will be performing in the field. Testers are qualified by Module or by individual tests. The Independent Assurance Inspector (IAI) from the Region Materials Labs are responsible for qualifying all testers.

The Region Materials Lab maintains a list of qualified testers for the entire Region. Contact your local Independent Assurance Inspector (IAI) for information on the qualified tester program.

Northwest	Randy Mawdsley	(206) 768-5927
	Larry Worcester	(206) 768-5926
	Dave Heisenrader	(206) 768-5929
North Central	Don Flanigan	(509) 667-3033
South Central	Mike Hammond	(509) 575-1793
Southwest	Travis Counts	(360) 905-2233
Olympic	Dave Mayoh	(360) 357-2773
Eastern	Steve Noland	(509) 324-6172

The testers in your office will be qualified to perform testing for those acceptance tests common to field offices.

Acceptance Testing

Field offices are responsible for tracking the acceptance tests performed on their contracts. Copies of the test reports should be filed in the bid item files for each contract.

Quantities of material used on the job should be tracked to insure the proper number of passing acceptance tests are performed for the material being used.

For example:

- Your contract calls for a quantity of 10,000 tons of Asphalt Concrete Pavement Class A (ACP CL A).
- The Record of Material for the contract lists 10,000 tons of ACP Cl A and shows 13 acceptance tests are required on this material.
- The actual quantity used on your contract for ACP Cl A is 12,500 tons.
- Because you are keeping records of the material placed on your contract, you see that 13 tests will not cover the required 1 test per 800 tons of mix.

The actual number of tests required for proper acceptance is 16 tests.

By being aware of the amount of material placed on your contract you can arrange to have the additional tests performed before the item of work is complete. For more information on testing go to the section of the Construction Manual titled "Sampling and Testing."

Chapter 9 of the Construction Manual has material acceptance criteria and testing frequency information. Chapter 9 includes a large variety of test procedures that may be performed in the field office lab or at the jobsite by a qualified tester.

- As a Material Documentation Engineer, you are responsible for tracking the acceptance tests performed on your contracts. Copies of the test reports should be filed in the bid item files for each contract.

- Quantities of material used on the job should be tracked to insure the proper number of acceptance tests or certifications is obtained for the quantity of material being used.

By being aware of the amount of material placed on your contract you can arrange to have the additional tests performed before the item of work is complete.

Material Transmittals

Many materials must be sampled in the field and transmitted to either the Region Materials Lab or the State Materials Lab in Tumwater. Whenever this is necessary be sure to attach a transmittal to the sample prior to shipping. See section 9-1.4 of the Construction Manual for various sample transmittals to be used for these materials.

Properly complete each transmittal with the required information. Materials lab personnel process many samples each day and are unable to supply missing information. There will be additional charges from the material labs for phone calls to request missing information or IF data entry must be done to complete a transmittal. Missing information can also delay testing, cause mistakes in testing, and may cause the sample to be discarded prior to being tested.

Minimum requirements for sample transmittal are:

1) Contract Number
2) Material Type (curing compound, concrete cylinder, gravel borrow, etc.)
3) Manufacturer's Name, Pit Number, or Concrete Plant Name
4) Make, model, color or type of material, be specific ("concrete Cl 4000", not "concrete")
5) Bid Item Number, if using the hand written form include it on the top of the page for easy reference.

6) Number of Components, applies mainly to blended aggregate or material for asphalt mix design.
7) Sampled By
8) Date Sampled
9) Sample Location (where it was taken or where it will be used)
10) Stationing (both begin and end) - where applicable
11) Field Test Date - if applicable
12) Remarks - when appropriate

Include any material certification, product data sheets, or MSDS information applicable with the sample transmittal.

Some of the more important information on sample transmittals:

A) Pit number, lot number, brand. Provide as detailed information as possible. This information helps distinguish your sample from others like it and makes tracking easier.
B) Sample number. For tracking purposes it is important to have the correct sample number for each material.
C) Remarks, this is the place for special instructions, perhaps you only need a portion of the testing done on a particular sample this is the place to make any remarks to that effect. Should something out of the ordinary occur during sampling or field-testing making a note of it here could explain any unusual test results.
D) Be sure to include the name or initials of the person who filled out the transmittal or sampled the material. Should any questions arise at the materials lab they will need a contact person who can answer questions.

For assistance with material transmittals, check with your Region Materials Lab or the State Materials Laboratory (MatsLab) in Tumwater.

State Materials Lab	Tumwater	(360)709-5400
Region Materials Labs:	Northwest	(206)768-5901
	Olympic	(360)357-2653
	Southwest	(360)905-2230
	Eastern	(509)324-6170
	North Central	(509)667-3035
	South Central	(509)577-1791

There are several types of sample transmittal currently in use. Some forms are electronic, others are in book form, half sheet size and are filled out by hand. Determine which type your office uses for each type of material, completely fill out the appropriate form, attach it (with any other information required) to the sample and send it to the appropriate testing lab.

Transporting Samples

Your method of sample delivery will depend on your location and the type of material you have sampled. Pay careful attention to packaging and addressing samples. You want the sample to arrive at the destination lab in a condition good enough to be tested. If you have questions about where to send a sample you may find information at either your regional materials lab or the State Materials Lab in Tumwater.

When liquids are sampled, be sure the container is of appropriate manufacture for the material. Some liquids are perfectly safe in a plastic jar, others will require a metallic container. Some materials, epoxies especially, will be sampled in the manufacturer's original containers. ALWAYS mark the contents of the package on the outside of the wrapping, couriers need to know what they are conveying and the materials labs will appreciate knowing what is inside before opening. When chemical materials are being sent, include all MSDS sheets for that material with your transmittal.

Section 9-5.2 of the Construction manual covers different types of samples and how often to take them.

Manufacturer's Certificates of Compliance & Certificates of Material Origin

Section 1-06.3 of the Standard Specifications covers the requirements for a manufacturer's certificate of compliance.

- A "Transmittal of Manufacturer's Certificate of Compliance" should be filled out and filed for each Manufacturer's Cert. on your job. This transmittal generally works well for steel items but for several different materials that don't quite fit the mold you must improvise a bit to use the transmittal.

- You can order these forms from Central Stores in tablets or download a copy from Filemaker Pro on your desktop. The form number is DOT 350-572. There is a copy of this form on page 34 of the appendix.

Manufacturer's Certifications that the contractor supplies will vary in appearance. You may receive a letter or an overstamp on a Bill of Lading. Certain information must be present on the Manufacturer's Certification regardless of its appearance.

- Upon receipt of the certification, review it for compliance with the contract, carefully compare test values to those in the specification. Use the checklist on Form 350-572, Transmittal of Manufacturer's Certification of Compliance as a guide.

- Standard Specifications 1-06.3 will list what you need to have for a Manufacturer's Cert. to be complete. The form (350-572) may be sent to

the State Materials Lab in Tumwater to determine if it is an acceptable Manufacturer's Certification. This should only need to be done if you lack the knowledge or resources to determine if certain test values meet the State, AASHTO, or ASTM specification involved. If you send the original to the State Materials Lab in Tumwater, make sure you make a copy first for your files.

After completion of form 350-572, give it to your PE to sign. Once signed make two copies, one for the Field Inspector and one copy for the Prime Contractor. File the original in your bid item file.

- Update the Maintained ROM before filing the certification.

Materials Acceptance for Electrical Bid Items

Because electrical bid items are complex and contain many parts it can be difficult to determine what is needed for material acceptance and approval. The State Materials Lab in Tumwater has an Electrical Engineer on staff to help you process RAM submittals for these items. The Subject Matter Expert reviews your submittals for compliance with your contract and will approve or reject materials on a per contract basis, making recommendations on proper acceptance method for each item.

Additionally, there is a guide for Electrical item acceptance; we think you will find it useful.

Illumination and Signal Material Basis of Acceptance – a Guide by Mike Bjordahl.

IlluminationSign
alsMaterialsAc...

CHANGE ORDERS

Change orders require the same material acceptance as any other bid item.

Work involving material permanently incorporated into the job must follow the same approval and acceptance procedures as required by the Standard Specifications.

A Change Order written to overrun an existing item requires additional testing or certification to account for the additional material. In these cases no new bid item number

is generated, the documentation requirements outlined in your ROM still apply, adjust the number of tests to agree with the new quantity.

Change Orders adding entirely new materials should either follow Standard Specifications or be written to name the new material being incorporated. When a Change Order specifies the manufacturer, make and model of material to be used it is treated exactly like all proprietary items. See the section on Proprietary Items above.

Contractors must submit a RAM, which should be coded using the same process as previously outlined in RAM Processing section of this manual.

FOLLOW UP

Follow through is important for all material submittals. If a catalog cut, shop drawing, manufacturer's certificate of compliance, or any other item is required, be sure the contractor provides those items to you. When test reports are required be sure to track what you send where and if you don't have results within a reasonable amount of time call the lab and follow up or check with the office testers. You will need these items for the appropriate approvals to complete the documentation package.

MANAGING DEFICIENCIES

Mistakes do happen, the missed test report, no manufacturer's certification, or out of specification material. There are several ways to handle exceptions or deficiencies that may preserve Federal funding. Do not try to hide a material deficiency, take appropriate measures to correct or mitigate the missing information and explain them on the Contract Materials Checklist when preparing a contract for final certification. There are amazingly few shortcomings that cannot be satisfactorily explained and alternate methods of acceptance found.

When a material deficiency exists determine what method of justification is necessary. Some material that is out of specification can be accepted with a change order taking a credit for a portion of the material cost. Missing test reports and certifications can often be justified to the satisfaction of the compliance reviewers with a letter to the file.

Any documentation for material deficiency should include the following information:

- Basic Contract Information

  Contract Number, Title and SR No.
  Federal Aid Number or State Project
  Physical Completion Date

- Basic Material Information – Required for Each Deficiency

  Bid Item Number and Name
  Specific material involved
  Quantity actually used
  Acceptance requirements for quantity used
  Amount of acceptance documentation in hand – passing/failing/approved/certified
  Amount of acceptance documentation deficient
  Approximate dollar value of material lacking acceptance documentation

- Additional Information if Appropriate for the Item

  Was the material's source from the State Materials Lab, QPL, or an approved RAM?
  If material is from a commercial supplier, do they have records available to support the quality of the material produced? (Major asphalt suppliers may have records for a short time).
  Has the product been accepted in other recent WSDOT installations?
  Was the material taken from sources that have been acceptable on another contract?
  Is the material installed in a structural or safety critical location?
  Is there any other particular circumstance or reasonable explanation that will support acceptance of the material in this specific instance?

This information is required by the State Construction Office in order to effectively discuss the federal participation issue with FHWA and resolve material certification deficiencies.

Talk to your project office personnel, regional materials documentation reviewers, or Regional Construction/Operations Engineer for guidance on how your region handles missing documentation.

POST CONSTRUCTION ACTIVITIES

The job isn't finished until the paperwork is done. This is especially true for WSDOT construction projects.

After the contract is complete it is time to prepare the "Final Records". For materials documentation this means checking each bid item for completeness.

- Obtain a copy of the final estimate for the contract you are preparing for Final Records. Using the final estimate and your maintained ROM, review each bid item for material documentation compliance.

    1. Check actual quantities used (paid for) against the quantity of material you have documentation for.
    2. Adjust your maintained ROM quantities to those actually paid for.
    3. Record any piece of documentation not already recorded
    4. Verify there is something in every bid item folder, even if it is only a piece of paper stating, "not used on this contract". It is beneficial if every bid item is addressed.
    5. Check that all field acceptance reports for QPL items are filed with the bid item information.
    6. Check that all materials requiring an inspection by Fabrication Inspection; a Stamp (on any cast materials) recorded, and the Sign Acceptance Decal is noted or Tags are recorded. Information for these stamps and tags can be found in Section 9-1.5 D of the Construction Manual.
    7. Check that items requiring Manufacturer's Certificate Of Compliance have the appropriate Certificates of Compliance and the proper amount of material is certified.
    8. Go through all Change Orders for the contract checking for materials that should be documented.
    9. Fill out the "Contract Materials Checklist" Form # 350-115, available through Stores or as an electronic form.

Once the contract is complete it is time to submit the Contract Materials Checklist to your Region Materials Compliance Reviewer. This form (350-115) must be filled out for each contract, signed by the project engineer and sent to your region compliance review team. There is a copy of this form in the appendix on page 38.

When the package is complete notify your region materials compliance reviewer that you are ready for materials certification and follow the procedures appropriate for your region. The region reviewer will visit your office or request you send your material files for review. When they have looked over your records they will either request further information or recommend certification for your contract.

After the contract has been certified by your regional materials compliance reviewer it may also be reviewed by the compliance review team from the State Materials Lab in Tumwater and/or by FHWA.

Approximately once every two years one of your office's contracts will be selected for a State Material Lab Compliance Review. This review will be an "in depth" look at your documentation for compliance to State requirements. Although this review may look into detail more carefully it will be somewhat like those of the Region and will result in a wrap up meeting following the review. Copies of the reviewer's findings will be sent to your Project Engineer, The Region Manager, E and E P Documentation and FHWA.

The best way to insure a good review is to be thorough when you do your own audit and document all deficiencies you find.

MATERIALS LABORATORY PHONE NUMBERS

This is a list of phone numbers for the State Material Lab that you may find useful.

- Materials Documentation Engineer (360) 709-5441
- Physical Testing Supervisor (360) 709-5446
- Chemical Testing Lab Supervisor (360) 709-5431
- Electrical Engineer – (360) 709-5436
- RAM Engineer (360) 709-5445
- QPL Engineer (360) 709-5442
- State Materials Compliance Reviewer (360) 709-5443